

Remarks

Applicant respectfully requests reconsideration of this application as amended. Claims 1, 10, and 21 have been amended. No claims have been cancelled or added. Claims 6, 17, and 28 were previously canceled. Therefore, claims 1-5, 7-16, 18-27, and 29-33 are presented for examination.

35 U.S.C. §112 Rejection

Claims 1-5, 7-16, 18-27 and 29-33 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Office Action states that the term "can be" in claims 1, 10, and 21 is a relative term that renders the claims indefinite. Claims 1, 10, and 21 have been amended to remove the term "can be". As such, applicant submits that claims 1, 10, and 21 are no longer indefinite. Therefore, applicant respectfully request the withdrawal of the 35 U.S.C. §112 rejection.

35 U.S.C. §132(a) Objection

The amendment filed 4/17/06 stands objected to under 35 U.S.C. §132(a) as introducing new matter into the disclosure. The Office Action states that the feature of "the plurality of multiply-accumulate units are modular so as that any number of multiply-accumulate units can be utilized proportionally for any given memory bandwidth" of claim 1, 10, and 21 is not expressly disclosed in the disclosure. Claims 1, 10, and 21 have been amended to remove this cited feature with the feature of "wherein the plurality of multiple-accumulate units are implemented in a modular manner to accelerate computations".

Support for this newly added feature can be found at page 10, lines 11-13 and page 12, lines 9-11. As such, applicant respectfully requests the withdrawal of the 35 U.S.C. §132(a) objection.

35 U.S.C. §102(e) Rejection

Claims 1-5, 7-16, 18-27 and 29-33 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sih et al. (U.S. Patent No. 6,606,700). Applicant submits that the present claims are patentable over Sih.

Sih discloses a digital signal processor architecture that is designed to speed up frequently-used signal processing computations, such as FIR filters, correlations, FFTs, and DFTs. The architecture uses a coupled dual-MAC architecture and attaches a dual-MAC coprocessor onto it in such a way as to achieve an increase in processor capability. (Sih at col. 1, ll. 49-55.)

Claim 1 recites:

A method comprising:

- receiving input data by an execution unit;
 - performing, by the execution unit using a plurality of multiply-accumulate units in the execution unit, a plurality of current multiply-accumulate operations on the received input data; and
 - saving the received input data for one or more multiply-accumulate operations to be performed by the execution unit after the current multiply-accumulate operation;
- wherein the performing a current multiply-accumulate operation includes:
- multiplying the received input data with a multiplier in the execution unit;
 - adding an output from the multiplier with another value using an adder in the execution unit; and
 - storing an output of the adder and providing the another value to the adder using an accumulator in the execution unit;
- wherein the plurality of multiple-accumulate units are implemented in a modular manner to accelerate computations.

First, applicant submits that Sih does not disclose or suggest saving the received input data for one or more multiply-accumulate operations to be performed by the execution unit after the current multiply-accumulate operation, as recited by claim 1. The Office Action states that Figures 1 and 2 of Sih inherently and expressly disclose this feature. (Office Action mailed 6/19/06 at pg. 10, pt. 7(a).) More specifically, the Office Action states “the feedback to the register file for saving into the register for the next process of MACs port PI1-PI3 in Figure 2” discloses the cited feature. (Id.)

However, applicant submits that the feedback to ports PI1-PI3 in Figure 2 of Sih is only for saving the results of the MAC computations in Sih. There is no disclosure or suggestion in Sih of utilizing these saved computations for another later MAC computation. Applicant can find no discussion in Sih of how the entries to ports PI1-PI3 of the register file are utilized. Applicant further submits that it is not inherent from Sih to utilize the saved entries in PI1-PI3 of the register file for later MAC computations. Therefore, Sih does not disclose or suggest the above-cited feature of claim 1.

Second, applicant submits that Sih does not disclose or suggest the plurality of multiple-accumulate units are implemented in a modular manner to accelerate computations. Applicant can find no disclosure or suggestion of such a feature anywhere in Sih. As such, Sih does not disclose or suggest this cited feature of claim 1.

Therefore, for the reasons discussed above, claim 1, as well as its dependent claims, is patentable over Sih. Independent claims 10 and 21 also recite, in part, saving the received input data for one or more multiply-accumulate operations to be performed by the execution unit after the current multiply-accumulate operation and the plurality of multiple-accumulate units are implemented in a modular manner to accelerate computations. As discussed above,

Sih does not disclose or suggest such features. Therefore, claims 10 and 21, as well as their respective dependent claims, are patentable over Sih for the reasons discussed above with respect to claim 1.

Applicant respectfully submits that the rejections have been overcome and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

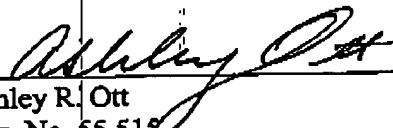
Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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